AMENDMENT(S) TO THE CLAIMS

1. (Currently amended) A method of classifying an image, the method comprising:

obtaining an image;

determining one or more classification thresholds;

determining a concentration ratio for the image that indicates a relative level of smoothness of a distribution of [[a]] an entire population of elements in the image;

comparing the concentration ratio to at least one of the one or more classification thresholds; and

classifying the image based on the comparison of the concentration ratio to at least one of the one or more classification thresholds.

2. (Original) A method as claimed in claim 1 wherein determining the concentration ratio for the image includes determining the luminance components of pixels in the image.

3. (Original) A method as claimed in claim 1 wherein determining the concentration ratio for the image includes determining the grayscale components of the image.

4. (Original) A method as claimed in claim 1 wherein determining the concentration ratio for the image includes generating a histogram for the image.

5. (Original) A method as claimed in claim 1 wherein determining one or more classification thresholds includes a training process.

6. (Previously presented) A method as claimed in claim 5 wherein the training process includes analyzing a set of images having known classifications.

7. (Previously presented) A method as claimed in claim 6 wherein analyzing a set of images having known classifications includes determining a concentration ratio for each image in the set of images.

8. (Previously presented) A method as claimed in claim 7 wherein determining the concentration ratio for each image in the set of images includes generating a histogram for each image.

9. (Previously presented) A method as claimed in claim 5 wherein determining one or more classification thresholds includes determining a threshold for text images and a threshold for photographic images.

10. (Previously presented) A method as claimed in claim 5 wherein classifying the image based on the comparison of the concentration ratio to at least one of the one or more classification thresholds is performed according to the following

If ($CR < T$) then image type = text
If ($T \leq CR < P$) then image type = graphic
If ($P \leq CR$) then image type = photographic
where CR is a concentration ratio of the image, T is a threshold for text images and P is a threshold for photographic images.

11. (Previously presented) A method of classifying an image, the method comprising:

obtaining an image;
determining one or more classification thresholds;
determining a concentration ratio for the image;

comparing the concentration ratio to at least one of the one or more classification thresholds; and

classifying the image based on the comparison of the concentration ratio to at least one of the one or more classification thresholds, wherein determining the concentration ratio for the image includes determining the concentration ratio according to the following

$$CR=\left(\sum_{L} P_L\right)^n \Big/ \left(\sum_{L} P_L^n\right)$$

where CR is a concentration ratio, n is greater than 1, and P_L is a population at a level L.

12. (Previously presented) A method as claimed in claim 11 wherein n is an even integer.

13. (Currently amended) An image classifying processor, the processor configured to obtain an image, obtain one or more classification thresholds, determine a concentration ratio for the image that indicates a relative level of smoothness of a distribution of [[a]] an entire population of elements in the image, compare the concentration ratio to at least one of the one or more classification thresholds, and classify the image based on the comparison of the concentration ratio to at least one of the one or more classification thresholds.

14. (Previously presented) An image classifying processor as claimed in claim 13 wherein the processor is configured to determine the luminance components of pixels in the image.

15. (Previously presented) An image classifying processor as claimed in claim 13 wherein the processor is configured to determine the grayscale components of the image.

16. (Previously presented) An image classifying processor as claimed in claim 13 wherein the processor is configured to generate a histogram for the image.

17. (Previously presented) An image classifying processor as claimed in claim 13 wherein the processor includes a memory and the memory includes a threshold for text images, and a threshold for photographic images.

18. (Previously presented) An image classifying processor as claimed in claim 13 wherein the processor is configured to classify the image based on the comparison of the concentration ratio to at least one of the one or more classification thresholds according to the following

If (CR < T) then image type = text
If (T ≤ CR < P) then image type = graphic
If (P ≤ CR) then image type = photographic
where CR is a concentration ratio of the image, T is a threshold for text images, and P is a threshold for photographic images.

19. (Previously presented) An image classifying processor, the processor configured to obtain an image, obtain one or more classification thresholds, determine a concentration ratio for the image, compare the concentration ratio to at least one of the one or more classification thresholds, and classify the image based on the comparison of the concentration ratio to at least one of the one or more classification thresholds, wherein the processor is configured to determine the concentration ratio for the image according to the following:

$$CR=\left(\sum_{L} P_L\right)^n \Big/ \left(\sum_{L} P_L^n\right)$$

where CR is a concentration ratio, n is greater than 1, and P_L is a population at a level L.

20. (Currently amended) A method of processing an image, the method comprising:

capturing an image of an object;

classifying the image in a class using a concentration ratio;

using the class to modify the operation of an image capturing device; and

applying controlled, equalization to an image generated by the image capture device, where the controlled, histogram equalization uses a concentration ratio that indicates a relative level of smoothness of a distribution of [[a]] an entire population of elements in the image.

21. (Currently amended) An image processing system comprising:

an image capture device;

an image classifier coupled to the image capture device in a feedback loop; and

a controlled, equalization processor coupled to the image capture device, that uses a concentration ratio that indicates a relative level of smoothness of a distribution of [[a]] an entire population of elements in the image.

22. (Currently amended) An image processing system comprising:

an image capture device configured to capture an image; and

an image classifier coupled to the image capture device in a feedback loop, the image classifier configured to determine a concentration ratio for the image that indicates a relative level of smoothness of a distribution of [[a]] an entire population of elements in the image, compare the concentration ratio to at least one or more classification thresholds, and classify the image based on the comparison of the concentration ratio to at least one of the one or more classification thresholds.

23. (Currently amended) A computer-readable medium containing instructions for processing an image by:

obtaining an image;

determining one or more classification thresholds;

determining a concentration ratio for the image that indicates a relative level of smoothness of a distribution of [[a]] an entire population of elements in the image;

comparing the concentration ratio to at least one of the one or more classification thresholds; and

classifying the image based on the comparison of the concentration ratio to at least one of the one or more classification thresholds.

24. (Currently amended) ~~The method as claimed in claim 20~~ A method of processing an image, the method comprising:

capturing an image of an object;

classifying the image in a class using a concentration ratio;

using the class to modify the operation of an image capturing device; and

applying controlled, equalization to an image generated by the image capture device, where the controlled, histogram equalization uses a concentration ratio that indicates a relative level of smoothness of a distribution of a population of elements in the image, wherein the concentration ratio is determined according to the following:

$$CR=\left(\sum_{L} P_L\right)^n \Big/ \left(\sum_{L} P_L^n\right)$$

where CR is the concentration ratio, n is greater than 1, and P_L is a population at a level L.

25. (Currently amended) ~~The image processing system as claimed in claim 21~~ An image processing system comprising:

an image capture device;

an image classifier coupled to the image capture device in a feedback loop; and

a controlled, equalization processor coupled to the image capture device, that uses a concentration ratio that indicates a relative level of smoothness of a distribution of a population of

elements in the image, wherein the processor is configured to determine the concentration ratio for the image according to the following:

$$CR=\left(\sum_{L} P_L\right)^{n} \Big/ \left(\sum_{L} P_L^{n}\right)$$

where CR is the concentration ratio, n is greater than 1, and P_L is a population at a level L.

26. (Currently amended) ~~The image processing system as claimed in claim 22~~ An image processing system comprising:

an image capture device configured to capture an image; and

an image classifier coupled to the image capture device in a feedback loop, the image classifier configured to determine a concentration ratio for the image that indicates a relative level of smoothness of a distribution of a population of elements in the image, compare the concentration ratio to at least one or more classification thresholds, and classify the image based on the comparison of the concentration ratio to at least one of the one or more classification thresholds, wherein the image classifier is configured to determine the concentration ratio for the image according to the following:

$$CR=\left(\sum_{L} P_L\right)^{n} \Big/ \left(\sum_{L} P_L^{n}\right)$$

where CR is the concentration ratio, n is greater than 1, and P_L is a population at a level L.